

# Management of Tuberculosis Training for Health Facility Staff

SECOND EDITION

## B. Detect Cases of TB



World Health  
Organization



TUBERCULOSIS FOUNDATION



**Management of Tuberculosis  
Training for Health Facility Staff  
Second Edition**

**B**

**DETECT CASES OF TB**



**K N C V**



**TUBERCULOSIS FOUNDATION**



## WHO Library Cataloguing-in-Publication Data

Management of tuberculosis: training for health facility staff – 2nd ed.

Contents: Modules: A: Introduction - B: Detect Cases of TB - C: Treat TB Patients - D: Inform Patients about TB - E: Identify and Supervise Community TB Treatment Supporters - F: Manage Drugs and Supplies for TB - G: Ensure Continuation of TB Treatment - H: Monitor TB Case Detection and Treatment - I: TB Infection Control in your Health Facility - J: Field Exercise – Observe TB Management - K: Management of Tuberculosis – Reference Booklet - L: Facilitator Guide - M: Answer Sheets.

1.Tuberculosis, Pulmonary - therapy 2.Health personnel - education 3.Health facilities 4.Teaching materials I.World Health Organization.

ISBN 978 92 4 159873 6

(NLM classification: WF 210)

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# Detect Cases of TB

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## **Acknowledgements**

### **Management of Tuberculosis: Training for Health Facility Staff, 2nd ed.**

This second edition of training modules was prepared by the Stop TB Department of the World Health Organization (Geneva, Switzerland) and Patricia Whitesell Shirey of ACT International (Atlanta, GA, USA). The project was coordinated by Karin Bergstrom. Fabio Luelmo and Malgorzata Grzemska were the main technical advisers. The modules were edited by Karen Ciceri. Natacha Barras provided administrative support and coordinated the layout and printing of the modules.

The following organizations contributed to the development of the modules through the Tuberculosis Control Assistance Program (TB-CAP): the American Thoracic Society (ATS), Management Sciences for Health (MSH), the United States Centers for Disease Control and Prevention (CDC), and the KNCV Tuberculosis Foundation.

The original versions of the training modules (published by the World Health Organization in 2003) were field-tested in Malawi through the support of the National Tuberculosis Control Programme of Malawi.

This updated version was tested through the support of the Division of Tuberculosis Elimination of the United States Centers for Disease Control and Prevention.

The United States Agency for International Development financially supported the development of these training modules through its Grant to the World Health Organization and through the sub-agreement to WHO of the Cooperative Agreement with the KNCV Tuberculosis Foundation for the Tuberculosis Control Assistance Program (TB-CAP).





# Detect Cases of TB

## Introduction

People who are infected with *Mycobacterium tuberculosis* and who develop signs or symptoms of the disease are said to have TB, or active TB. If the tubercle bacilli affect the lungs, the disease is called **pulmonary TB**. If the bacilli affect other organs, such as the lymph nodes, bones and joints, genitourinary tract, meninges, pleura or intestines, the patient has **extrapulmonary TB**. Pulmonary TB is the most common form of the disease worldwide.

Patients with pulmonary TB excrete tubercle bacilli that can be detected by examining their sputum under a microscope (that is, by sputum smear microscopy). If TB is diagnosed, these patients are called **sputum smear-positive** cases. They are the most infectious cases because tubercle bacilli are sprayed into the air every time they cough and sneeze. Contacts of sputum smear-positive cases can become infected when they breathe in tubercle bacilli. The longer that sputum smear-positive cases are present in the home and community before beginning treatment, the greater the likelihood that they will infect others. As discussed in module A: *Introduction*, not all people who are infected with *M. tuberculosis* will develop TB. However, those who do progress from infection to disease should be detected and treated.

Early detection of the most infectious patients with sputum smear-positive pulmonary TB should be a priority for every health facility, so that those patients can be treated before spreading the infection to others. Early detection and treatment of these cases also speeds recovery and limits the destruction of the lungs by the bacilli.

Some patients have pulmonary TB that is **sputum smear-negative**; that is, bacilli are few and do not show up in microscopy of sputum samples. Sputum smear-negative patients are much less likely to infect others. Diagnosis requires other methods such as culture or X-ray plus an expert clinician. People who have **extrapulmonary TB** can be diagnosed by a clinician; they are usually not infectious but, as in all cases of TB, they also must be treated.

Health workers should consider the possibility of TB in patients who come present for care with illness that includes cough, with or without other signs and symptoms compatible with TB such as bloody sputum, night sweats, fever and weight loss. These patients should be considered as suspected cases of TB, or “TB suspects” and should have their sputum examined by microscopy. Sick patients who do not cough but have other signs or symptoms suggestive of TB should be examined by a clinician.

In many countries, people with TB are not detected despite repeated attendance at health facilities. Health workers fail to consider TB or the examination of sputum is delayed or not performed at all. As an additional way to detect cases, health facilities should screen for possible TB in all people who attend a first-level health facility. Screening is done by asking every adult who enters the facility, for whatever reason, whether he or she has had cough for 2 weeks<sup>1</sup> or more. Anyone who answers “yes” should be considered a TB suspect.

---

<sup>1</sup>This training course uses cough of 2 weeks’ duration as the threshold for performing sputum examination. Some countries use 3 or 4 weeks.

## Objectives of this module

### Participants will learn:

### Refer to section:

- |  |        |
|--|--------|
| • How to identify TB suspects among sick patients coming for care                                  | 1      |
| • Signs and symptoms compatible with TB and indicators of high TB risk                             | 1      |
| • How to screen for additional TB suspects   | 2      |
| • How to use a <i>Register of TB Suspects</i>  | 3, 6.1 |
| • How to collect sputum samples  | 4      |
| • How to recommend HIV testing   | 5      |
| • How to use sputum microscopy results to identify TB cases  | 6.2    |
| • Steps to inform TB suspects of the sputum microscopy results and begin additional care as needed | 8      |
| • How to check household contacts of TB cases  | 9      |

If you need to look up an unfamiliar word, refer to the glossary at the end of module A: *Introduction*.

## 1. Identify TB suspects among sick patients coming for care

A TB suspect is any person who presents with signs or symptoms suggestive of TB, in particular cough of long duration. Other signs or symptoms of TB include bloody sputum, night sweats, fever and weight loss. The most appropriate way to detect pulmonary TB in a TB suspect is by sputum smear microscopy.

### 1.1 Assess the patient

Assess the patient according to customary practice to determine why the patient has come for help today and to identify signs and symptoms of illness. Two important parts of the assessment are to assess the patient for emergency signs and for symptoms compatible with TB.

#### ► *Assess for emergency signs*

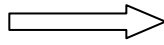
Quickly assess the patient (adult or child) for emergency signs and the possible need for immediate referral.

- Count the patient's respiratory rate. Is it more than 30 breaths per minute?
- Take the patient's temperature. Is there high fever (more than 38°C)?
- Count the patient's pulse rate. Is it more than 120 beats per minute?
- Observe the patient's general condition. Is the patient unable to walk unaided?

If any of these emergency signs are present, the patient is seriously ill and should be referred to a clinician for assessment and care without delay.

**If any emergency sign is present**

- Respiratory rate >30/minute
- High fever >38 °C
- Pulse rate >120/minute, or
- Unable to walk unaided



The patient is seriously ill. **Refer to a clinician for assessment and care without delay.**

However, if the seriously ill patient has had cough for more than 2 weeks and emergency signs, but cannot be referred to a higher level facility with increased equipment and capability, take the following measures at the first-level facility:

- Immediately start broad-spectrum antibiotics for bacterial infection (use only antibiotics not used for the treatment of TB, such as co-trimoxazole)
- Perform HIV testing and sputum smear examination
- Strictly follow safe injection practices
- In countries with high TB prevalence, if there is no clinical improvement within 3–5 days, initiate anti-TB treatment (as described in module *C: Treat TB Patients*) and complete the course of antibiotic treatment.

► ***Assess the sick patient for signs and symptoms compatible with TB***

Some sick patients will come to the health facility because of cough and explain that cough is the reason for their visit. Some sick patients may not mention cough, so you should ask them:

- Do you have a cough?

Whenever a patient tells you that he or she has been coughing, ask:

- How long have you been coughing for?

Also ask questions and weigh the patient to determine whether there are additional signs or symptoms compatible with TB.

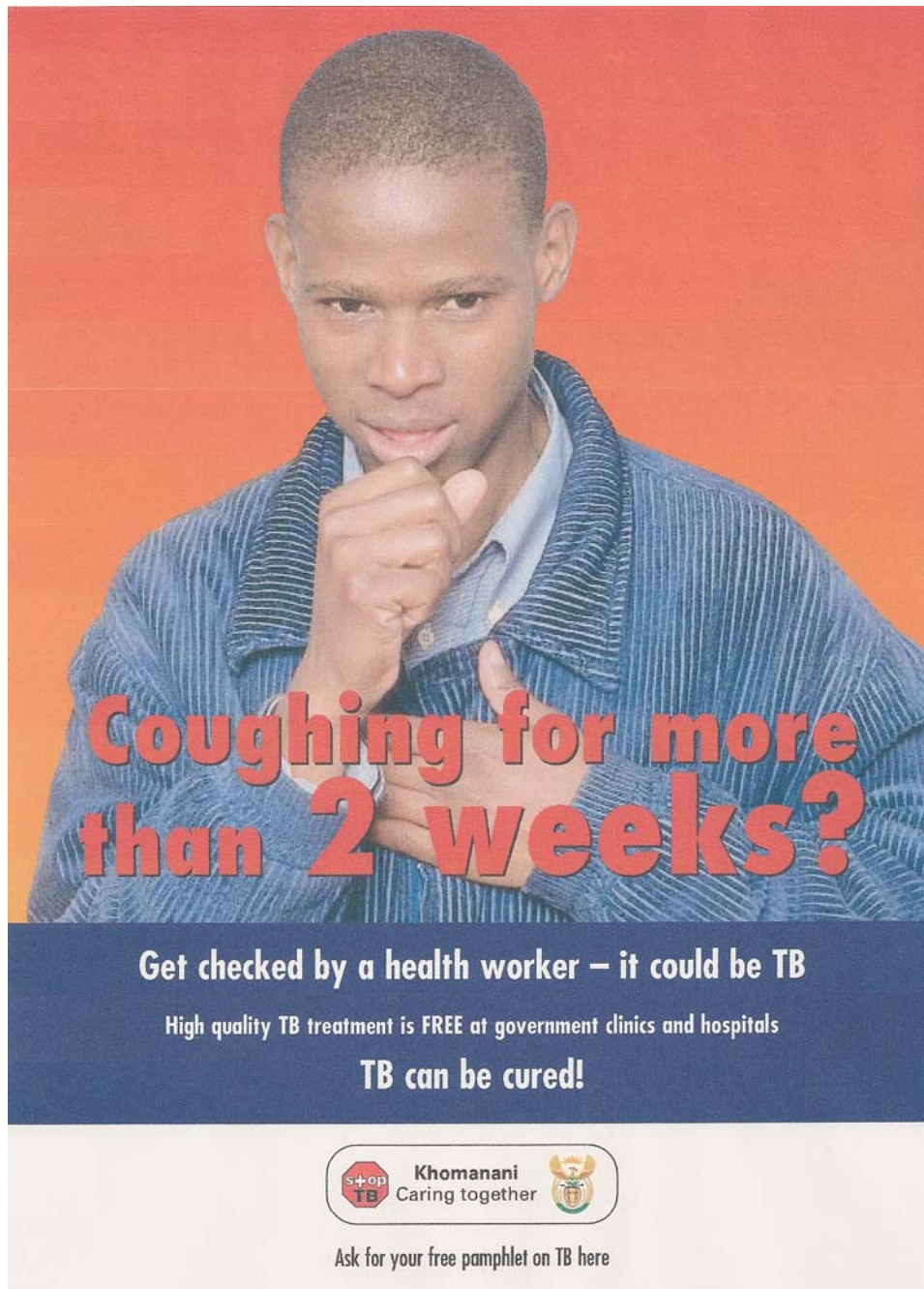
- Ask about bloody sputum (Do you cough up blood?)
- Ask about night sweats (Have you had night sweats?)
- Ask about history of fever (Have you had a fever?)
- Measure temperature. Does the patient have fever now?
- Determine whether recent weight loss (Ask: Have you lost weight? How much has your weight changed? Weigh, record weight, and compare with previous weight, if available.)
- Ask about previous history of TB in the patient or family contacts.

**Signs and symptoms compatible with TB:**

- cough for 2 weeks or more
- bloody sputum
- night sweats
- fever
- weight loss

## 1.2 Suspect TB in a patient with cough

When you see a patient (adult or child) who comes to the health services **because of cough**, either with or without other signs or symptoms compatible with TB (for example, bloody sputum), consider the patient a TB suspect. Cough is the most common symptom of pulmonary TB and is present in 95% of all sputum smear-positive TB cases. A patient who comes because of cough should have a sputum smear examination to determine whether TB bacilli are present.



People who have been coughing for 2 weeks or longer are TB suspects and should be checked by a health worker for TB. Posters displayed in health facilities, such as this one from South Africa as part of the South African Khomanani campaign, are a useful way to communicate about this important sign of TB to people attending health facilities.

### 1.3 Suspect TB in patients who have signs or symptoms compatible with TB but without cough

Sometimes, a patient comes for diagnosis of illness with signs or symptoms compatible with TB (that is, bloody sputum, night sweats, fever or weight loss) but does not cough (has not been coughing and/or cannot cough up sputum). In this case, you should suspect TB in this patient. However, sputum smear examination will not be able to determine whether this patient has TB. Refer this patient to a clinician qualified to diagnose TB.

#### Signs and symptoms compatible with TB:

- bloody sputum
- night sweats
- fever
- weight loss

A clinician at a first-level facility can diagnose TB based on clinical signs and/or sputum smear microscopy. When chest X-ray, biopsy and/or specialized knowledge are needed to diagnose disease, refer the patient to a second-level facility. There, a clinician may use X-ray examination, culture, biopsy, clinical assessment and other methods to diagnose cases of smear-positive or smear-negative pulmonary TB and cases of extrapulmonary TB.

In children aged under 5 years, chronic symptoms suggestive of TB include cough or other respiratory symptoms of more than 21 days (3 weeks) duration, fever for more than 2 weeks' duration, loss of weight or failure to gain weight (failure to thrive). If any of these signs are present, suspect possible TB and refer the child to a second-level facility or paediatrician for diagnosis.

In settings where HIV is prevalent, cough is not a sensitive indicator to identify TB suspects. HIV-positive TB patients may not produce a cough because their immune systems are compromised. For this reason, it is particularly important to suspect TB in an HIV-positive patient who has any of the signs or symptoms compatible with TB, even without cough, and refer him or her for diagnosis by a clinician.

### 1.4 Suspect TB in patients coming for diagnosis of illness who are at high risk of TB

In addition, suspect TB in patients (adults or children) presenting for diagnosis of any illness who are **at high risk of having TB**. Consider at high risk any person who is:

- HIV-positive, or
- a household contact<sup>2</sup> of a person with infectious TB, or
- immunocompromised (such as patients receiving treatment for cancer, people with diabetes, patients who smoke or use tobacco, the malnourished, those with silicosis, and individuals who are dependent on drugs or alcohol).

To assess whether the patient is at high risk of TB, ask about the patient's HIV status (if known) and whether he or she lives in a household with someone who has TB.

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<sup>2</sup> A household contact is a person who lives in the home of a TB patient and who is therefore at greater risk of becoming infected. A person who works with a TB patient, especially in a closed environment, may be considered a contact.

- ▶ Do you know your HIV status? What is it?
- ▶ Does anyone in your household have TB?

Also ask questions and consider the patient's medical history to determine whether there are conditions that may cause that person to be immunocompromised. For example, ask:

- ▶ Are you being treated for cancer?
- ▶ Do you have diabetes?
- ▶ Do you smoke or use tobacco?
- ▶ Do you have silicosis?
- ▶ Do you use drugs (prescription/medical or other)?
- ▶ Do you drink alcohol? (Possible excessive use if more than 14 drinks<sup>3</sup>/week for women, or 21 drinks/week for men, or drunk more than 2 times in past year)

It may not be necessary to ask questions about all these items. For example, it may be obvious that the patient is malnourished, or smokes, or you may already know that the patient is dependent on alcohol or drugs.

Any sick person at high risk of TB should have a sputum examination. A positive sputum result means that bacilli were found in the sputum, and the patient has smear-positive pulmonary TB.

Consider as being at **high risk for TB** any person presenting with illness who is:

- HIV-positive, or
- a household contact of a person with infectious TB, or
- immunocompromised (that is, is receiving treatment for cancer, has diabetes, smokes or uses tobacco products, is malnourished, has silicosis, is dependent on drugs or alcohol)

---

<sup>3</sup> For example, one bottle of beer (330 ml at 5% ethanol), a glass of wine (140 ml at 12% ethanol), or a shot of spirits (40 ml at 40% ethanol) represent a standard drink of about 13 g of ethanol.

## Identify TB suspects among people coming to your health facility for a current illness

### 1. Assess for emergency signs

- Respiratory rate >30 breaths per minute?
- High fever >38 °C?
- Pulse > 120 beats per minute? or
- Unable to walk unaided?



***If any emergency sign is present, refer patient to a clinician for assessment and care without delay.***

None  
present



Then determine:

### 2. Did the patient come because of cough?

### 3. Does the patient have signs or symptoms compatible with TB without cough?

- bloody sputum?
- night sweats ?
- fever?
- weight loss?

### 4. Is the patient at high risk of TB?

- HIV positive?
- household contact of a person with infectious TB?  
or
- immunocompromised?



***If yes to any of these, the patient is a TB suspect and should have a sputum examination.***

## 2. Screen all adults entering the facility for TB suspects

Detecting and treating the most infectious cases of TB at an early stage of the disease – even before the symptoms cause the patient to seek care – are the most effective ways to reduce TB transmission in the community. Therefore, in addition to identifying TB suspects among all sick patients, routine screening of all adults entering the facility is required in order to identify those with infectious TB who pass through the health facility. Some people who have infectious pulmonary TB do not feel sick or do not mention their cough when they come to the health services for another reason, such as for an antenatal clinic, or dermatology, or to bring a child for immunization.

To identify additional TB suspects and find additional cases of TB, screen all adults who

attend the health facility. To screen for TB suspects, health workers should routinely ask every adult (aged 15 years or older<sup>4</sup>) who comes to the health facility:

- ▶ Do you have a cough?<sup>5</sup>
- ▶ How long have you been coughing for?

If an adult has been coughing for 2 weeks or longer, request sputum examination.

Assign to a health worker the responsibility for asking every adult entering the facility, including patients and family members accompanying them, about cough. This task could be assigned to a nurse who receives patients or to the staff member who registers patients. Note that up to 50% of the TB suspects may be missed if the health facility considers TB only in people who come to the health facility because they are sick with cough.

Cough is the most common symptom of pulmonary TB and is present in 95% of all sputum smear-positive TB cases. However, the large majority of people with cough do not have TB. Many conditions affecting the lower respiratory tract cause cough. Therefore, examining the sputa of all those who cough is not recommended: this would be expensive and time-consuming. The finding of sputum smear-positive pulmonary TB is very low in children and in adults who have **coughed for less than 2 weeks**. Therefore, these individuals do not need sputum examination unless a clinician suspects TB.

**An adult who has coughed for 2 weeks or longer is a “TB suspect” for pulmonary TB and should have a sputum examination.**

### **3. List the TB suspect in the *Register of TB Suspects***

The *Register of TB Suspects* is a record of:

- all patients identified as TB suspects at the health facility, and
- all sputum samples sent to the laboratory.

The register focuses on suspects for pulmonary TB, whether they were identified because of illness that included signs or symptoms compatible with TB or when screening adults attending the facility for cough of 2 weeks or more. The register is particularly useful for monitoring whether results are returned for all sputum samples sent to the laboratory. It is also helpful for monitoring case detection activities of the health facility.

---

<sup>4</sup> Some countries use 12 years. This will depend on the country-specific decision on the age ranges of children and adults.

<sup>5</sup> Some countries may ask about productive cough.



Whenever you identify a TB suspect, list the TB suspect in the register. An example page from a *Register of TB Suspects* is shown on page 9.

Be sure to write down a complete name and street address so that the TB suspect can be located if the result is positive and the TB suspect does not return.

**Example**

The health centre assigns a number to each TB suspect.

The patient's first sample was collected on 8 August His two samples were sent to the laboratory on 10 August.

Year 2009

## REGISTER OF TB SUSPECTS

Facility Patangeta Health Centre[illegible]

The health worker is waiting for Sheena Arday to return with the second sample. When this is collected, both samples will be sent to the laboratory.

*ND*

The health worker collected Emil Avornyo's first sputum sample this morning. Emil should return with the second sample tomorrow.

Mary Abatu has been coughing for more than 3 weeks, so she is a TB suspect. The health worker entered her name and address in the register and will now collect sputum to send for examination.

\* (pos) positive; (neg) negative; (I) discordant/inconclusive; (ND) not done or unknown. Documented evidence of HIV testing during or before anti-TB treatment is reported here.

If the TB suspect was referred for diagnosis by a private provider, record the provider's name, address and contact telephone number in the column under "Observations/Clinician's diagnosis" so that you can inform the provider of the smear results and other actions taken.

**The importance of recording a correct address for each TB suspect**

- To find the patient if the result of sputum smear examination is positive (infectious TB) and the patient does not return for follow up.
- To find the infectious patient quickly so that treatment may start as early as possible, reducing the risk transmitting TB to household contacts and community members.

In clinical care, the patient is responsible for obtaining care; in public health care, the health provider is responsible for limiting the spread of disease.

## **4. Collect sputum samples for smear examination**

All TB suspects (adults and children aged 10 years or older) should have a sputum smear examination to determine whether tubercle bacilli are present. (Refer younger children who are TB suspects to a paediatrician or a second-level facility for diagnosis.)

Collect two sputum samples (also called specimens) from every TB suspect as described below and send them to the laboratory for examination. If the laboratory is easily accessible, you may send the TB suspect directly to the laboratory instead. If a patient is very ill, refer the patient immediately to a clinician for assessment and care. Do not delay treatment of a very ill patient for the purposes of obtaining sputum samples.

Collect the first sputum sample when the person is identified as a TB suspect, whether the patient is a sick person seeking care, or is identified during routine screening. This will minimize the inconvenience to the patient of having to return to the facility an extra time and therefore decrease the risk of losing the TB suspect.

### **4.1 Enlist the TB suspect's cooperation**

Explain the reason for sputum examination and enlist the TB suspect's cooperation. Explain that examining sputum under a microscope is the best way to determine whether there are tubercle bacilli in the lungs.

### **4.2 Collect sputum samples from the TB suspect**

Follow your country's guidelines on sputum collection. General guidelines and a schedule are given on page 12. Collect the two sputum samples during a two-day period. (Some countries use three samples; however, two samples identify 95% of smear-positive cases.)

- Sample one is collected "on the spot." Give instructions on how to produce and collect sputum. Explain why the sputum is needed and show the TB suspect how to cough up

sputum and handle the container. The TB suspect should go outdoors or to a well-ventilated area to collect the sample, thereby reducing the risk of exposing health-care workers and other patients to the disease. If possible, observe and guide the TB suspect during sample collection, but do not stand in front of the TB suspect while he or she coughs up sputum. The TB suspect should give the sample to you. Then give the TB suspect another labelled container to take home and use the next morning.

- Sample two is collected by the TB suspect upon awaking the next morning. The TB suspect brings this second sample to you at the health facility.

**Remember:**

- **Label the containers (not the lids) before collecting the sputum samples.**
- **Collect sputum in a well-ventilated area, preferably outdoors, and away from other people.**
- **Check whether the sample contains sufficient sputum, not just saliva. If not, ask the TB suspect to add more.**
- **After collecting the sputum, be sure that the lid is closed tightly. Wipe off the outside of the container if needed.**
- **Wash your hands thoroughly with soap and water.**

Tell the TB suspect when to return to the health facility for the results. If the TB suspect has TB, start treatment as soon as possible. This will help the patient to feel better sooner and prevent the spread of the disease to others in the household.

Display posters in the collection area that explain to TB suspects how to produce sputum.

In many health facilities, the specimen number is the TB suspect number or the patient's District TB number, followed by -1 or -2.

## Collect sputum samples for examination

- ▶ **Explain** that the TB suspect needs a sputum examination to determine whether there are TB bacilli in the lungs.
- ▶ **List** the TB suspect's name and address in the *Register of TB Suspects*.
- ▶ **Label** the sides of the sputum containers (not the lids). Two samples are needed for diagnosis of TB or for follow-up examination.
- ▶ **Fill out** *Request for Sputum Smear Microscopy Examination* form.
- ▶ **Explain and demonstrate, fully and slowly, the steps to collect sputum.**
  - Show the TB suspect how to open and close the container.
  - Breathe deeply and demonstrate a deep cough. The TB suspect must produce sputum, not only saliva.
  - Explain that the TB suspect should cough deeply to produce sputum and spit it carefully into the container.
- ▶ **Collect**
  - Give the TB suspect the container and lid.
  - Send the TB suspect outside to collect the sample in the open air if possible, or to a well-ventilated place, away from other people and with sufficient privacy.
  - When the TB suspect returns with the sputum sample, look at it. Is there a sufficient quantity of sputum (not just saliva)? If not, ask the TB suspect to add some more.
  - Explain when the TB suspect should collect the next sample, if needed.

### TB SPECIMEN

Name: \_\_\_\_\_  
Health facility: \_\_\_\_\_  
Date: \_\_\_\_\_  
Specimen no. \_\_\_\_\_

### Schedule for collecting two sputum samples

#### Day 1:

- Collect "on-the-spot" sample as instructed above (**Sample 1**).
- Instruct the TB suspect how to collect an early morning sample tomorrow (first sputum after waking). Give the TB suspect a labelled container to take home. Ask the TB suspect to bring the sample to the health facility tomorrow.

#### Day 2:

- Receive early morning sample from the TB suspect (**Sample 2**).

- ▶ **When you collect the second sample, tell the TB suspect when to return for the results.**
- ▶ **Store**
  - Check that the lid is tight. Wipe off the outside of the container, if needed.
  - Isolate each sputum container in its own plastic bag, if possible, or wrap in newspaper.
  - Store in a cool place. (If samples will be sent for culture, keep refrigerated.)
  - Wash your hands.
- ▶ **Send**
  - Send the samples from health facility to the laboratory.
  - Total time from collection until reaching laboratory should be no more than 5 days. (Samples sent for culture should be sent promptly and reach the laboratory in 1–2 days.)

### 4.3 Fill out the *Request for Sputum Smear Microscopy Examination*

Fill out the *Request for Sputum Smear Microscopy Examination* as shown below in an example for a new TB suspect. Write the patient's complete name and address. Send this form with the patient's sputum samples to the microscopy laboratory. After the sputum examination, the laboratory will complete the results section and then return the form to the health facility. (Note that this same form is used when requesting sputum smear examination for diagnosis and also when sending sputum for follow-up of treatment.)

#### Example

#### REQUEST FOR SPUTUM SMEAR MICROSCOPY EXAMINATION

*The completed form with results should be sent promptly by laboratory back to referring facility*

Referring facility<sup>1</sup> Patangeta Health Centre Date 10/10/09

Name of patient Mary Abatu Age 19 Sex: ☐ M ☒ F

Complete address 33 Primos Road, Patangeta

Reason for sputum smear microscopy examination:

☒ Diagnosis

When this form is used for a follow-up of treatment, the "Reason for Examination" is "Follow-up."

When the examination is for follow-up of treatment, record the District TB Number (assigned by the district after diagnosis).

OR ☐ Follow-up Number of month of treatment: \_\_\_\_\_ District TB Register No.<sup>2</sup> \_\_\_\_\_

Name and signature of person requesting examination Sister E Callner 

1. Including public or private health facility/providers

2. Be sure to enter the patient's District TB Register No. for follow-up of patients on TB treatment

#### RESULTS (to be completed in the laboratory)

Laboratory Serial No. \_\_\_\_\_

Date collected <sup>3</sup>	Sputum Specimen	Visual appearance <sup>4</sup>	RESULTS				
			NEG	(1-9)	(+)	(++)	(+++)
9/10/09	1						
10/10/09	2						
	3						

Write the date that each sputum sample was collected. For diagnosis of a TB suspect, two samples are needed.

3. To be completed by the person collecting the sputum

4. Blood-stained, muco-purulent, or saliva

Examined by \_\_\_\_\_

Date \_\_\_\_\_ Signature \_\_\_\_\_

## 4.4 Pack the sputum samples and send them to the laboratory

Keep the sputum samples in a refrigerator or in as cool a place as possible until transport. Sputa should not be combined but should be sent to the laboratory as single specimens, each sample in a separate container.

When you have two samples from a patient, pack the sputum containers in a transport box and enclose the *Request for Sputum Smear Microscopy Examination*. If there are samples for more than one patient, enclose a *Request for Sputum Smear Microscopy Examination* for each patient's samples. If a patient does not return to the health facility within 3 days with the second sample, send the first sample to the laboratory anyway.

Send the samples to the laboratory as soon as possible. Do not hold samples for microscopy for longer than 3–4 days. Samples for microscopy do not require warming or cooling during shipping, except in very hot climates where they should be kept cool. Samples should reach the laboratory within 5 days of collection.

Prepare a dispatch list to accompany each transport box. The dispatch list should identify the sputum samples contained in the box. Before sending the box to the laboratory:

- Check that all containers are closed and wiped clean.
- Check that the dispatch list states:
  - the correct total number of sputum containers in the box,
  - the identification numbers on the containers, and
  - the name of each patient.
- Check that a *Request for Sputum Smear Microscopy Examination* is enclosed for each patient.
- Close the box carefully.
- Write the date on the dispatch list.
- Put the dispatch list in an envelope and attach the envelope to the outside of the transport box.

### Example

#### TB sputum samples dispatch list

Health facility: Patangeta Health Centre

Contents: Total number of sputum containers: 6

TB suspect name	Specimen ID number
<i>Sheena Arday</i>	335-1, 335-2
<i>Emil Avornyo</i>	337-1, 337-2
<i>Mary Abatu</i>	338-1, 338-2

In this example, the specimen ID number is the TB suspect number followed by -1 or -2.

Packed by (signature): Nurse Bodo

Date: 12/10/09

On the *Register of TB Suspects*, record the date [dd/mm/yr] that the samples were sent to the laboratory.

When the samples reach the laboratory, the laboratory technician performs the following steps to complete a sputum examination:

- Spreads each sample on a glass slide, then fixes and stains it.
- Examines each sample through the microscope. Some 100 fields are systematically examined for acid-fast bacilli (AFB). When present, the AFB are counted and their quantity graded according to the scale below. The result of sputum smear microscopy is positive if any AFB are present.
- Writes the results in the laboratory register.
- Writes the results on the bottom of the *Request for Sputum Smear Microscopy Examination* form and returns it to the health facility.

<b>Number of AFB in 100 fields</b>	<b>Result recorded</b>
Number of AFB observed	Negative
1–9 AFB	Scanty (record exact number observed)
10–99 AFB	+
100–999 AFB (or 1–10 per field)	++
1000 or more (or more than 10 AFB per field)	+++

In some countries or areas, a laboratory can perform culture of the specimen for diagnosis. Where culture is available, a clinician may request culture and drug susceptibility testing (DST) as a diagnostic method, especially for suspected smear-negative and extrapulmonary TB cases, and for suspected MDR-TB cases. When the clinician requests culture, use *Request for Sputum Smear Microscopy, Culture, Drug Susceptibility Test*. (See Annex C.)

Samples to be sent for culture should be kept refrigerated, properly packed to avoid leakage and shipped promptly. Transportation must be arranged so that the samples are kept in cold conditions (refrigerated, not frozen) and reach the laboratory within 1–2 days of collection.<sup>6</sup>

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<sup>6</sup> A national reference laboratory should provide instructions for health facilities on how best to collect, pack and send specimens for culture and DST. As these tests become available, the District TB Coordinator should disseminate this information to health facilities.



## 5. In HIV-prevalent settings, recommend HIV testing to TB suspects during the diagnostic procedure

Recommend HIV testing to all patients (adults and children) who come to the facility **with cough or other symptoms compatible with TB** and to all patients **diagnosed with TB**. HIV testing should be recommended to these patients at the same time (on the same day) that the initial sputum sample is collected for sputum smear microscopy examination.

As a part of the diagnostic procedure, ask all patients who have cough or other signs or symptoms compatible with TB whether they know their HIV status. If a patient knows, ask to see written documentation of the test result and record the test result and date in the *Register of TB Suspects*. If the patient does not know, or has not been tested, or if there is no documentation available, recommend that the patient be tested (or re-tested) for HIV today. Depending on the capabilities at your health facility, the patient may be tested and receive the result on the same day or may receive the results at the same time that the sputum microscopy results become available.<sup>7</sup>

A clinician, nurse, antiretroviral therapy (ART) aid or other counsellor, or another health worker who has been trained for this task, can provide the pre-test information, obtain informed consent and do the HIV test on-site in the clinic. This is more efficient and more likely to be successful than referring patients elsewhere for HIV testing and counselling. Group education sessions can also be used to provide the pre-test information and counselling in many settings.

Advising a TB suspect or a TB patient to have an HIV test includes several important components, often referred to as the 3C's: counselling, confidentiality and consent. Pre-test information given by the health worker includes three main steps:

1. Providing key information on HIV/AIDS and its interaction with TB.
2. Providing key information about HIV testing: clinical and preventive benefits of knowing HIV status, confidentiality, and available services and costs.
3. Confirming the willingness of the patient to proceed with the HIV test and seeking informed consent. Provide additional information as necessary and refer the patient for additional counselling, as needed.

---

<sup>7</sup> Offer HIV testing **only if** the facility is capable of providing the appropriate testing and counselling. Staff at the facility **MUST** receive training and supervision to enable them to:

- give individuals sufficient information to make an informed and voluntary decision to be tested for HIV,
- maintain patient confidentiality,
- perform post-test counselling, and
- make referrals to appropriate services.

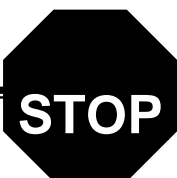
Note that separate clinical evaluations for TB and HIV will mean more patient visits.

Annex D contains a suggested script for offering HIV testing.<sup>8</sup>

When the results of the HIV test become available, inform and counsel the patient accordingly. All patients must be counselled when the test results are given, regardless of the test result (see Annex E). Also record the HIV test result on the *Register of TB Suspects* as either:

- (Pos) – positive
- (Neg) – negative
- (I) – discordant or inconclusive (when two tests are done and one is positive and the other is negative)
- (ND) – not done

If HIV testing is not done on the same day that sputum samples are collected for microscopy, the test will be recommended again to all patients who are diagnosed with TB.



### **Now do Exercise A – Role Play**

When you have reached this point in the module, you are ready to do Exercise A, a role play of collecting sputum from a TB suspect. Tell your facilitator when you have reached this point. While you are waiting, read the instructions for Exercise A beginning on page 36 of this module.

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<sup>8</sup> Adapted from *Tuberculosis care with TB-HIV co-management: Integrated Management of Adolescent and Adult Illness (IMAI)*. Geneva, World Health Organization, 2007 (WHO/HTM/HIV/2007.01; WHO/HTM/TB/2007.380).

**6. When the results of laboratory testing are received, record them in the *Register of TB Suspects* and decide on appropriate action**

The laboratory technician records the results of laboratory testing on the bottom of the *Request for Sputum Smear Microscopy Examination*. See the example below.

**Example**

**REQUEST FOR SPUTUM SMEAR MICROSCOPY EXAMINATION**

*The completed form with results should be sent promptly by laboratory back to referring facility*

Referring facility<sup>1</sup> Patangeta Health Centre Date 10/10/09

Name of patient Mary Abatu Age 19 Sex: ☐ M ☒ F

Complete address 33 Primos Road, Patangeta

Reason for sputum smear microscopy examination:

☒ Diagnosis

OR ☐ Follow-up Number of month of treatment: \_\_\_\_\_ District TB Register No.<sup>2</sup> \_\_\_\_\_

Name and signature of person requesting examination Sister Mary Callner 

1. Including public or private health facility/providers

2. Be sure to enter the patient's District TB Register No. for follow-up of patients on TB

If positive, the technician ticks a box in the correct column under "Results" to indicate the quantity of acid-fast bacilli present.

**RESULTS (to be completed in the laboratory)**

Laboratory Serial No. \_\_\_\_\_

Date collected <sup>3</sup>	Sputum Specimen	Visual appearance <sup>4</sup>	RESULTS				
			NEG	(1-9)	(+)	(++)	(+++)
9/10/09	1	Mucopur		6			
10/10/09	2	Mucopur				✓	
	3						

3. To be completed by the person collecting the sputum

4. Blood-stained, muco-purulent, or saliva

Examined by R Read

Date 13/10/09

Signature 

If fewer than 10 bacilli are seen in the sample, the technician writes the number seen in the "1-9" box.

Date that sputum samples were examined by the laboratory technician

## 6.1 Record the results in the *Register of TB Suspects*

Read the results from the Results section on the *Request for Sputum Smear Microscopy Examination* form. These tell whether each sample (or specimen) was found positive or negative for AFB.

Find the suspect's line in the *Register of TB Suspects* (see example on page 25). Record the results for each of the samples in the "Results of Sputum Examinations" column. For each sample,

- if negative, record "Neg" or,
- if positive, record the grading (+, ++, or +++) or, if the result was fewer than 10 bacilli in the whole smear, usually called "scanty," record the number written by the laboratory technician.

This is a column in the *Register of TB Suspects*. See the complete form on page 25.

Results of sputum examinations		
1	2	3
Neg	Neg	
Neg	Neg	
Neg	+	
++	+++	
Neg	Neg	
Neg	Neg	
6	++	

Mary Abatu's results (shown on the previous page) are recorded in this way.

When you enter the results of sputum smear examination, check whether the results for any TB suspect are missing. If the results are not received by the expected time, follow up with the laboratory to obtain those results.

If an HIV test result has been received during the time since you first entered the TB suspect in the *Register of TB Suspects*, record it.

## 6.2 Decide on appropriate action in response to the microscopy results

Read the Results column in the *Register of TB Suspects* to determine whether the TB suspect will be considered sputum smear-positive or sputum smear-negative for pulmonary TB. Two sputum samples should have been collected and examined.

- **If one or more specimens are positive**, the patient is sputum smear-positive. These results mean that the patient has infectious pulmonary TB and needs treatment for TB. How to select and administer this treatment is described in module C: *Treat TB Patients*. Sputum smear-positive patients must begin treatment. If the patient does not return to the health facility for the results, someone from the health facility should visit the patient's home.
- **If all specimens are negative**, the TB suspect is sputum smear-negative for infectious pulmonary TB. However, to decide on appropriate action, you must consider whether the patient is still sick with signs or symptoms consistent with TB.
  - ***If the TB suspect is no longer coughing and has no symptoms consistent with TB***, inform the suspect that the sputum examination found no pulmonary TB and that no treatment is needed.
  - ***If the TB suspect is still coughing or has other symptoms consistent with TB***, refer the suspect to a clinician for clinical assessment.<sup>9</sup> Make a note about the referral in the *Register of TB Suspects*, under “Observations/Clinician’s diagnosis.” Also complete a *Tuberculosis Referral/Transfer* form. (How to complete this form is taught in module G: *Ensure Continuation of TB Treatment*.)

The clinician will treat the smear-negative patient who is still coughing or has other symptoms consistent with TB with a non-specific antibiotic if possible (for example, co-trimoxazole or ampicillin). If the cough or other symptoms persist after antibiotic treatment, the clinician may make another clinical assessment or repeat sputum smear microscopy in two weeks' time, or refer the patient to a second-level health facility for diagnosis.

**Exception:** An HIV-positive patient who has negative sputum smears with cough or other symptoms compatible with TB should be referred for assessment immediately rather than being treated with a nonspecific antibiotic and waiting for a response to treatment.

A patient whose clinical condition deteriorates should be referred immediately to a clinician or to a hospital (regardless of the smear status).

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<sup>9</sup> Initiate anti-TB treatment in a smear-negative patient who is seriously ill and where there is a strong likelihood that delays will occur in consulting by a clinician and/or receiving the results of culture and X-ray.

- ***If a TB suspect who was identified through routine screening does not return to find out the results***, it is not necessary to locate the TB suspect unless the sputum microscopy result is positive (infectious pulmonary TB).

Check in the *Register of TB Suspects* to determine if the patient was referred by a private provider or other facility. If so, the name and address plus telephone number should be recorded in the column “Observations/Clinician’s diagnosis.” Contact the provider to inform him or her of the smear examination results. (Note: If the patient was referred by a private physician for sputum examination and tested negative, you may refer the patient back to the physician with the results of the sputum examination.)

## 7. Receive a patient in whom TB was diagnosed by a clinician

Sections 1–6 described how health workers identify TB suspects, collect sputum samples and use the results of sputum smear microscopy to detect cases of smear-positive pulmonary TB.

Another method for detecting a case of TB is when a clinician makes the diagnosis. A clinician who suspects that a patient has TB should request sputum smear examination even if the patient has been coughing for less than 2 weeks, or is not coughing. A clinician at a second-level facility who has additional resources can use standard chest radiography (X-ray), a clinical assessment and other methods to document smear-negative pulmonary TB. A clinician may use a clinical assessment and complementary tests (culture, other methods) to detect cases of extrapulmonary TB.<sup>10</sup> A paediatrician may diagnose TB in a child based on history (especially of close contact with a smear-positive TB case), clinical examination, tuberculin testing, laboratory confirmation and X-ray, if possible. If rapid DST is available, a clinician may detect MDR-TB before the start of treatment.

Case classification	Diagnosed by	Definition used for diagnosis
<b>Pulmonary TB, sputum smear-positive (PTB+)</b>	Health worker	One or more initial sputum smear examinations positive for acid-fast bacilli (AFB)
<b>Pulmonary TB, sputum smear-negative (PTB–)</b>	Clinician	<p>Sputum smear examination is negative for AFB (all samples) <b>and</b></p> <p>A. Culture is positive for <i>M. tuberculosis</i></p> <p><b>or</b></p> <p>B. Decision is made by a clinician to treat with a full course of anti-TB therapy, <b>and</b></p> <p>Radiographic abnormalities consistent with active pulmonary TB <b>and either</b></p> <ul style="list-style-type: none"> <li>laboratory or strong clinical evidence of HIV infection</li> <li><b>or</b></li> <li>if HIV negative (or unknown HIV status living in an area of low HIV prevalence), no response to a course of broad-spectrum antibiotics (excluding anti-TB drugs and fluoroquinolones).</li> </ul>
<b>Extrapulmonary TB</b>	Clinician	A patient with TB of organs other than the lungs.
<b>Any patient in whom both pulmonary and extrapulmonary TB are diagnosed should be classified as having pulmonary TB.</b>		

<sup>10</sup> Diagnostic culture is more sensitive than microscopy in detecting TB. However, it is a more expensive and slower diagnostic technique (taking at least 6 weeks to provide a definitive result) and is not accessible to most clinicians. Diagnostic culture is not recommended for detection of infectious cases but can be used by a clinician to diagnose smear-negative TB, if available.

When you refer a TB suspect (adult or child) to a second-level health facility for assessment, the TB suspect may return with a diagnosis of TB and a prescription for treatment. If so, record the clinician's diagnosis in the far right column of the *Register of TB Suspects*. See the example register on page 25.

Sometimes a clinician may diagnose a patient as having sputum smear-negative TB or extrapulmonary TB and then send the patient to you for treatment. Although this patient may not appear in the *Register of TB Suspects*, you will open a *TB Treatment Card* for this patient and start treatment. Module C: *Treat TB Patients* describes how to treat all these different types of TB patients.

## **8. Inform TB suspects of the results of sputum smear microscopy**

### **8.1 Inform TB suspects who are sputum smear-positive that they have pulmonary TB**

TB suspects who have sputum smear-positive pulmonary TB should be informed clearly and sensitively about their TB and started on treatment the same day. If a TB suspect does not return to the health facility to find out the results on the scheduled day, and if the results of the sputum examination are positive, every effort should be made to locate the suspect. This may require the health worker visiting the TB suspect's home (according to the address recorded in the *Register of TB Suspects*).

When you inform the patient that the sputum examination showed TB, explain in simple terms what TB is and what type of TB the patient has (that is, pulmonary TB or TB of some other organ). Reassure the patient that TB can be cured and that treatment is given free of charge.

This is a very important meeting with the TB patient. At this initial discussion, you will begin treatment and provide important information and support. This is the beginning of a long relationship with the patient, one that is essential for the successful treatment of the disease. All communication must be kind, supportive and medically correct. Some steps of this meeting are described in detail in other modules:

- Determine the appropriate treatment regimen for the patient and open the patient's *TB Treatment Card*. Identify where the patient will be treated. (See module C: *Treat TB Patients*.)
- Help the patient choose a community TB treatment supporter if needed. (See module E: *Identify and Supervise Community TB Treatment Supporters*.)
- Inform the patient about TB, directly-observed treatment, the treatment regimen, and TB transmission; discuss main worries or doubts and answer any questions. (See module D: *Inform Patients about TB*.)

Explain that other people in the household may also be infected with TB. Ask for the names and ages of all contacts in the household. Explain that you will check each of the contacts for possible TB. (Section 9 describes how to record and assess household contacts.)



## **8.2 Inform TB suspects who are sputum smear-negative that they do not have infectious TB**

If the sputum results are negative, inform the TB suspect that the sputum examination did not find infectious TB. If the TB suspect is no longer coughing and has no signs or symptoms compatible with TB, explain that no treatment is needed. However, if the patient is still coughing or has TB signs or symptoms, refer the patient for clinical assessment (see section 6.2).

The example *Register of TB Suspects* on the next page shows how the register is used to track when sputum samples are sent and results received. The register shows the results of each patient's sputum examination. It also shows the date that a *TB Treatment Card* was opened. Other information can be recorded in the final column, such as referral to clinician and a clinician's diagnosis.

**Example**

Year 2009
**REGISTER OF TB SUSPECTS**

Facility Patangeta Health Centre

Date (dd/mm)	TB Suspect Number	Name of TB Suspect	Age		Complete Address	Result of HIV Test *	Date First Sputum Collected	Date Sputum Sent to Laboratory	Date Results Received	Results of Sputum Examinations			TB Treatment Card opened? (record date)	Observations/ Clinician's diagnosis
			M	F						1	2	3		
8/10	332	Evaristo Sarda	48		Rambar Village, Bardu	neg	8/10	10/10	15/10	Neg	Neg			
	333	Jai Shrestha	24		980 Center Street, Patangeta	ND	8/10	10/10	15/10	Neg	Neg			Dr. Pho, Town Ctr. 333-4354
9/10	334	Ahmed Masud	44		House 4/1E, Street 12,	Record "Neg" if negative or, if positive, record the grade.	9/10	10/10	15/10	Neg	+		17/10	Ahmed Masud has smear- positive TB. So do Sheena Arday, Mary Abatu, and Kamran Nyathi. A treatment card was opened for each of them.
	335	Sheena Arday		34	1A Hope Road, Patangeta		9/10	12/10	18/10	++	+++		19/10	
	336	Phyllis Kotei		40	71 Long Street, Patangeta	ND	9/10	10/10	15/10	Neg	Neg			
10/10	337	Emil Avornyo	38		Bulo House, Market St, Patangeta	neg	10/10	12/10	18/10	Neg	Neg			
	338	Mary Abatu		19	33 Primos Road, Patangeta	ND	10/10	12/10	18/10	6	++		20/10	
12/10	339	Grace Msiska		27	Parmu Village	ND	12/10	17/10	19/10	Neg	Neg			
15/10	340	Mary Musowe		22	34 Airport Rd, Patangeta	ND	15/10	17/10	19/10	Neg	Neg			
	341	Josiah Kasere	24		Isoli Village	neg	15/10			Neg	Neg			
16/10	342	Kamran Nyathi	49		Half Tree Rd, Isoli Village	ND	16/10				3		27/10	
	343	Sarah Nyathi		39	Half Tree Rd, Isoli Village	neg	16/10	19/10	22/10	Neg	Neg			Ref'd - fever, cough
	344	Mohammed Fazal	41		312 Dubar St, Patangeta	pos	17/10	19/10	22/10	Neg	Neg			HIV clinic ref'd
17/10	345	Mansour Osman	54		10A Market Rd., Patangeta	ND	17/10	19/10	22/10	Neg				
18/10	346	Nesa Farah		36	Parmu Village	pos	18/10	19/10	24/10	Neg	Neg		30/10	Ext Pul TB/Cat III
	347	Bhagban Dutta	61		114D Airport Rd, Patangeta	neg	29/10	2/11	4/11	Neg	Neg			
19/10	348	A.K. Prakash	55		Middle Street, # 22, Raman	ND	19/10	24/10	31/10	Neg	Neg			
22/10	349	K. Misra		31	Street 9, Bel Village	ND	22/10	24/10						A clinician diagnosed extrapulmonary TB, and a treatment card was opened.
	350	Ram Singh	22		Bulrat Street, # 4, Patangeta	ND	22/10	24/10	10	Neg	Neg			
	351	Reeza Himonga		25	Rickshaw Rd, K House, Patangeta	ND	This suspect's results were not received. Ask the laboratory about them.			Neg	Neg			

**STOP****Now do Exercise B – Written Exercise**

When you have reached this point in the module, you are ready to do Exercise B. Turn to page 40 and follow the instructions for Exercise B. Do this exercise by yourself. Then discuss your answers with a facilitator.

## 9. Identify TB suspects among household contacts of confirmed pulmonary TB patients

A household contact is a person who lives in the home of a TB patient and who is therefore at greater risk of becoming infected. Ask every smear-positive pulmonary TB patient<sup>11</sup> for the names of all contacts in the household. Record each name along with the age and the relationship to the TB case (spouse, child, sister, etc.) on the back of the patient's *TB Treatment Card*. How to open a *TB Treatment Card* is explained in detail in module C: *Treat TB Patients*. Below is the box that appears on the back of the card, completed for Mary Abutu.

**Example**

List all household contacts as shown below. Then ask the TB patient to bring in for assessment all contacts aged 5 years and older who have cough, and every child aged less than 5 years living in the household. In some areas, health workers are expected to visit the home to assess all children aged under 5 years.

First names and surnames	Age	Relationship to case	Date seen	Result
<i>Osa Abatu</i>	25	<i>husband</i>		
<i>Luca Abatu</i>	1	<i>son</i>		
<i>Keema Onyango</i>	40	<i>mother</i>		
<i>Ruth Onyango</i>	17	<i>sister</i>		

<sup>11</sup> Some countries require that household contacts of all smear-negative pulmonary TB and extrapulmonary TB cases are also listed.

## 9.1 Detect TB suspects among adult household contacts

When household contacts (adults and children aged 5 years or older) come to the health facility, follow the usual procedures to detect TB suspects.

- Ask whether the individual has a cough and, if yes, ask about the duration of cough.
- If the cough has persisted for 2 weeks or longer, the individual is a suspect for pulmonary TB. (If no cough or cough less than 2 weeks, no further assessment is needed.)
- Record the TB suspect in the *Register of TB Suspects* and collect two sputum samples for sputum smear examination.
- Use the results of sputum smear examination to determine whether the TB suspect has smear-positive pulmonary TB.

## 9.2 Check children from the household for signs or symptoms suggestive of TB

Check all children aged less than 5 years from the household for the following chronic signs or symptoms suggestive of TB:

- Cough or other respiratory symptoms lasting more than 21 days (or 3 weeks)
- Fever  $>38^{\circ}\text{C}$  for more than 2 weeks (after common causes such as malaria or pneumonia have been excluded)
- Loss of weight or failure to gain weight (failure to thrive)

Children can present with TB at any age, but the most common age is between 1 and 4 years. If any of these signs or symptoms are present, suspect possible TB and refer the child to a second-level health facility or a paediatrician for diagnosis or exclusion of TB. The source of infection of most children is an infectious adult in their household.

Diagnosing TB in children (aged less than 15 years) is very difficult. Since sputum is rarely obtainable from children and is usually negative, a clinician may make a diagnosis based on clinical findings, family history of contact with a sputum smear-positive case, X-ray examination, tuberculin test, culture (if available), or non-response to a course of broad-spectrum antibiotic treatment (excluding rifampicin).

If the child has cough and can produce sputum, collect two samples for examination before referral (in case the child is not able to reach a clinician).

Household contacts, primarily young children, should receive preventive therapy and immunization if needed and if appropriate. Note that preventive therapy with isoniazid can be given only to people who do not have TB, and BCG immunization is not useful for those already infected or ill with TB. Section 2 of Module C: *Treat TB Patients*, provides guidelines on preventive therapy and immunization.

### 9.3 Record the results of the assessment of each household contact

Record the results of assessing each household contact in the Results column of the Household contacts section of the *TB Treatment Card*, as shown in the example below. This record will help you and your supervisor to check that all household contacts have been followed-up.

#### **Example**

#### **Household contacts**

First names and surnames	Age	Relationship to case	Date seen	Result
<i>Osa Abatu</i>	<i>25</i>	<i>husband</i>	<i>25/10</i>	<i>Cough 1 week</i>
<i>Luca Abatu</i>	<i>1</i>	<i>son</i>	<i>20/10</i>	<i>No symptoms</i>
<i>Keema Onyango</i>	<i>40</i>	<i>mother</i>		<i>No cough</i>
<i>Ruth Onyango</i>	<i>17</i>	<i>sister</i>		<i>No cough</i>



## Summary of important points

- An adult or child who comes to the health facility because of cough, with or without other signs or symptoms compatible with TB, is a suspect for pulmonary TB. Other signs or symptoms compatible with TB include bloody sputum, night sweats, fever and weight loss.
- A patient who comes to the health facility for diagnosis of any illness and has a high TB risk is a TB suspect. TB risk is high in any person who is HIV positive, or is a household contact of a person with infectious TB, or is immunocompromised (for example, is receiving treatment for cancer, has diabetes, or smokes).
- A patient who comes to the health facility for diagnosis of illness and has signs or symptoms compatible with TB but does not cough should be referred to a clinician qualified to diagnose TB. Some patients, especially HIV-positive individuals, may have TB without a cough.
- To screen for additional TB suspects, health workers should ask every adult (aged 15 years and older) who enters the health facility:
  - ▶ Do you have a cough?
  - ▶ How long have you been coughing for?

An adult who has coughed for 2 weeks or longer is a TB suspect.

- All TB suspects should have sputum smear microscopy examination to determine whether they have infectious smear-positive pulmonary TB.
- List the name and complete address of every TB suspect in the *Register of TB Suspects*.
- Collect two sputum samples from every TB suspect for diagnosis. In HIV-prevalent settings, offer HIV testing during the diagnostic procedure to all patients (adults and children) who come because of cough or other signs or symptoms compatible with TB.
- When the results of sputum microscopy are received from the laboratory, record the results for each specimen in the *Register of TB Suspects*.
  - If one or more specimens are positive, the patient has smear-positive pulmonary TB.
  - If all specimens are negative, the patient is smear-negative for infectious pulmonary TB. However, if the patient is still coughing or has other signs or symptoms compatible with TB, refer the patient to a clinician for assessment.
- A patient who has smear-positive pulmonary TB is infectious. Locate and inform this patient about their TB as soon as possible. It is important to start treatment immediately in order to prevent the spread of the disease to others in the household and community and to improve the condition of the patient.
- Ask sputum smear-positive TB patients to bring these members of the household to the health facility to be checked for TB:
  - All children aged less than 5 years
  - Any others in the household who have cough.

## Self-assessment questions



*Answer the self-assessment questions below to check what you have learnt. Then compare your answers to those given on pages 32–33.*

1. A health worker should quickly assess each sick patient for emergency signs and the possible need for immediate referral care. List four emergency signs to look for:
  - a)
  - b)
  - c)
  - d)
  
2. Consider each of the following patients. Should the health worker suspect TB? Should the health worker try to collect sputum from the patient? Place a tick beside each TB suspect and two ticks if you should try to collect sputa.
  - \_\_\_\_\_ A man who came because he has a cough.
  - \_\_\_\_\_ A man who came because he is losing weight, has night sweats and diarrhoea; when questioned, he says he does not have a cough.
  - \_\_\_\_\_ A woman who came because she feels very weak and has coughed for more than a week. Her husband has recently started treatment for TB.
  - \_\_\_\_\_ A woman who brought her child to the health centre because he is sick with diarrhoea; when questioned, she said she always has a cough because she smokes a pack of cigarettes every day.
  - \_\_\_\_\_ A man who came to the clinic for sexually-transmitted infections (STIs). When questioned at registration, he said he has no cough but he feels feverish.
  - \_\_\_\_\_ A man who came to the health centre with his wife who started TB treatment yesterday. He says he has no cough and feels fine.
  
3. How many sputum samples are needed for examination for diagnosis?  
When and where are each of these samples collected?
  
4. List three safety precautions to observe when collecting sputum:
  - a)
  - b)
  - c)
  
5. What information is recorded in the *Register of TB Suspects* before sputum smear examination?



6. What information is recorded in the *Register of TB Suspects* after sputum smear examination?

7. What are the benefits to a TB suspect of being tested for HIV?

8. The results of sputum smear examination of a TB suspect are shown below. What is the diagnosis?

Date collected	Sputum Specimen	Visual appearance	RESULTS				
			NEG	(1-9)	(+)	(++)	(+++)
21/7/09	1	m/pur	✓				
22/7/09	2	M/pur				✓	
	3						

What should the health worker do for the patient?

9. The results of sputum smear examination show that a TB suspect has smear-positive pulmonary TB; however, the TB suspect does not return to the health facility for the results. What should the health worker do?

Why is it important for the health worker to take this action?

10. A TB suspect who is found to have smear-positive pulmonary TB may have infected other people with TB. Who should the TB suspect ask to come to the health facility to be checked for TB?

**Now compare your answers with those on the next page**



## Answers to self-assessment questions

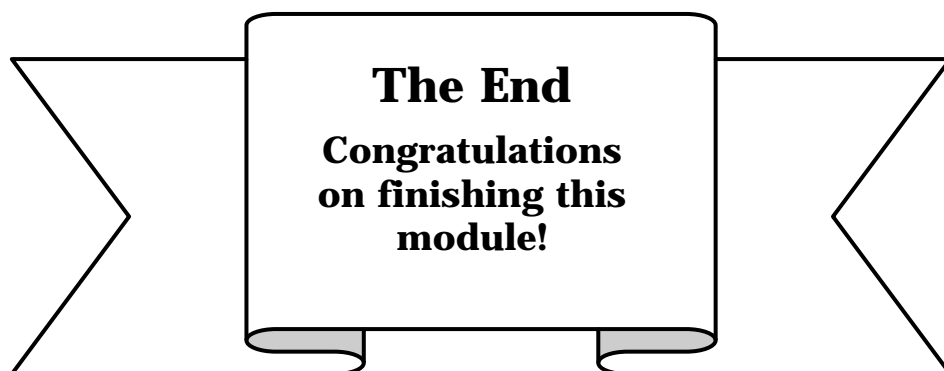
*If you had difficulty answering any question, turn back and study the section indicated (in parentheses). If you do not understand something, discuss it with a facilitator.*

1. *Four emergency signs to look for include:*
  - a) *Respiratory rate of more than 30 breaths per minute*
  - b) *Temperature above 38 °C*
  - c) *Pulse rate higher than 120 beats per minute*
  - d) *Unable to walk unaided**(Section 1.1)*
2. *The TB suspects are ticked. A second tick indicates that you should try to collect sputum samples from the suspect:*
  - ☒ ☒ *A man who came because he has cough. (Section 1.2)*
  - ☐ ☒ *A man who came because he is losing weight, has night sweats and diarrhoea; when questioned he says he does not have a cough. (This patient is a TB suspect because he reports 2 symptoms compatible with TB: losing weight and night sweats, even though he does not have cough. Since he is unlikely to be able to produce sputum, he should be referred to a clinician for diagnosis.) (Section 1.3)*
  - ☒ ☒ *A woman who came because she feels very weak and has coughed for more than a week. Her husband has recently started treatment for TB. (This woman is a suspect because she is sick with a cough and is also a household contact of someone with TB.) (Section 1.2, 1.4)*
  - ☒ ☒ *A woman who brought her child to the health centre because he is sick with diarrhoea; when questioned, she said she always has a cough because she smokes a pack of cigarettes every day. (This woman has coughed for longer than 2 weeks. In addition, she has a high TB risk because she smokes.) (Section 1.4, 2.0)*
  - ☐ ☐ *A man who came to the clinic for sexually transmitted infections (STIs). When questioned at registration, he said he has no cough but feels feverish. (This person is not a TB suspect; he was identified through screening, but he has no cough.) (Section 2.0)*
  - ☐ ☐ *A man who came to the health centre with his wife who started TB treatment yesterday. He says he has no cough and feels fine. (This person is a household contact, but he has no cough.) (Section 1.4, 2.0, 9.1)*
3. *Two samples are needed. They are collected as follows:*
  - *First sample: on Day 1 at the health facility.*
  - *Second sample: on Day 2 at the TB suspect's home, first thing after waking.**(See section 4.2)*
4. *You should have listed three of the following precautions:*
  - *Collect sputum outdoors or in a well-ventilated place.*

- Do not stand in front of the TB suspect when he or she coughs up sputum.
  - Be sure that the lid of the container is closed tightly.
  - Wipe off the outside of the container, if needed.
  - Isolate the sputum container in a plastic bag or wrap it in newspaper.
  - Wash your hands. (Section 4.2)
5. The following information is recorded in the Register of TB Suspects before sputum smear examination: date, TB suspect number, name and complete address of TB suspect, age, sex, result of HIV test given previously (if known), date sputum collected, date sputum sent to laboratory. (Section 3)
  6. The following information is recorded in the Register of TB Suspects after sputum smear examination: date sputum results received at the health facility; results of sputum examination (for each specimen); whether a TB Treatment Card was opened and, if yes, date; result of HIV test if received. In the right column, observations or clinician's diagnosis; or, if the patient was referred to the health facility by another provider, the name and address or telephone number of the referring provider; if the TB suspect was referred to a clinician for assessment, the name of the clinician. (Sections 6.1 and 7)
  7. Benefits to a TB suspect of being tested for HIV:  

*If a TB suspect is known to be HIV-positive, his or her TB disease can be diagnosed and treated correctly, and the prognosis will be more accurate. The patient also may be able to receive treatment for HIV to feel better and live longer.*

*If a TB suspect tests negative for HIV, the health service can focus on ensuring access to services and commodities to help the patient remain HIV negative. (See Annex D)*
  8. Smear-positive pulmonary TB; the health worker should inform the TB suspect that the sputum examination found TB, open a TB Treatment Card, help the patient to choose a community TB treatment supporter if needed, and inform the patient about TB. (See 6.2 and 8.1)
  9. The health worker should make every effort to locate the TB suspect, including going to the TB suspect's home. It is important to find the TB suspect quickly and begin treatment to prevent infection of others in the household and community. Rapid treatment will also improve the patient's condition and increase the chances of cure. (See 6.2)
  10. All children aged less than 5 years living in the household should come. Any other household contacts with cough should also come to be checked for TB. (See sections 8.1 and 9)



|

## **Exercises for Module B:**

### **Detect Cases of TB**





## Exercise A

### Role Play – Collecting sputum for smear examination

For this exercise, your facilitator will divide the participants into groups of three. In each group, one person will act as the health worker, one as the TB suspect, and one as an observer. The role play will be done three times so that each participant practises the role of the health worker.

Your group will need copies of the *Register of TB Suspects* and the *Request for Sputum Smear Microscopy Examination* (provided on the next pages in this module), sputum containers and a pen. Your facilitator will give you some sputum containers.

In the module, turn to the pages titled “Collect Sputum for Examination” (page 12) and “Recommend HIV Testing” (pages 53–55). Keep these pages handy for reference during the role play. (These pages also appear in the *Reference Booklet*.)

#### Instructions for the health worker

Use the *Register of TB Suspects* and the *Request for Sputum Smear Microscopy Examination* provided for this exercise on pages 38–39 in this module.

This person came to the health facility because he/she has coughed for more than a month. You consider him/her a TB suspect. Your task now is collecting his/her sputum for examination. You will speak with the TB suspect to enlist his/her cooperation and obtain the information that you need. You will also ask about his/her HIV status and, if it is not known, recommend HIV testing. When you describe available HIV testing services and cost, describe some actual services that you are familiar with.

#### Steps:

- Explain that the TB suspect needs a sputum examination and enlist his/her cooperation.
- In the *Register of TB Suspects*, list the date, a TB suspect number, and the TB suspect’s name, age, sex, and address.
- Label the sputum containers.
- Fill out a *Request for Sputum Smear Microscopy Examination* form.
- Explain to the TB suspect how to collect sputum.
- Collect a sputum sample.
- Ask the TB suspect to collect an early morning sample tomorrow and then bring it to you.
- Ask the TB suspect whether he/she knows his/her HIV status.
- If HIV status is not known or not documented, recommend HIV testing today.
- Give pre-test information on HIV/AIDS and its interaction with TB.
- Provide key information about HIV testing: clinical and preventive benefits, confidentiality, available services and costs.
- Confirm the willingness of the TB suspect to proceed with the test and seek his/her informed consent.

### Instructions for the TB suspect

Your task is to act the role of a typical TB suspect. You have coughed for longer than a month and feel unwell. Today, you have come to the health facility because you want some medicine to make you feel better. When the health worker asks, make up a name and an address. You do not know much about TB or sputum examination, and may be surprised when the health worker asks you to provide a sputum sample. When the health worker explains to you what to do, ask questions if the instructions are not clear. When you are asked to cough up sputum, cough and pretend to spit into the container. You do not know your HIV status.

### Instructions for the observer

Your task is to watch carefully during the role play so that you can comment on what was done well and what could be improved. Use the pages “Collect Sputum for Examination” and “Recommend HIV Testing” as checklists and tick the items as the health worker does them. Make other notes in the margin of things done well or poorly.

At the end of the role play, tell the health worker whether any steps were omitted. Comment on steps done well and where improvements could be made. Your comments should be brief.

After the observer has commented, change roles and repeat the role play described above. Repeating the role play will help you to become more familiar and comfortable with the steps. When all the participants have practised the role of the health worker, the facilitator will lead a brief discussion.

Tell a facilitator when you are ready for the group discussion.



When the group has finished this exercise, **GO BACK** to page 18 and read until the next stop sign (page 26).



Year \_\_\_\_\_

**REGISTER OF TB SUSPECTS**

Facility \_\_\_\_\_

Date (dd/mm)	TB suspect number	Name of TB suspect	Age		Complete address	Result of HIV test*	Date first sputum collected	Date sputum sent to laboratory	Date results received	Results of sputum examinations			TB Treatment Card opened (record date)	Observations/ Clinician's diagnosis
			M	F						1	2	3		

\* (Pos) Positive; (Neg) Negative; (I) Discordant/Inconclusive; (ND) Not done or unknown. Documented evidence of HIV testing during or before anti-TB treatment is reported here.

**Exercise A****REQUEST FOR SPUTUM SMEAR MICROSCOPY EXAMINATION**

*The completed form with results should be sent promptly by laboratory back to the referring facility*

Referring facility<sup>1</sup> \_\_\_\_\_ Date \_\_\_\_\_

Name of patient \_\_\_\_\_ Age \_\_\_\_\_ Sex: ☐ M ☐ F

Complete address \_\_\_\_\_

Reason for sputum smear microscopy examination:

☐ Diagnosis

OR ☐ Follow-up Number of month of treatment: \_\_\_\_\_ District TB Register No.<sup>2</sup> \_\_\_\_\_

Name and signature of person requesting examination \_\_\_\_\_

1. Including public or private health facility/providers

2. Be sure to enter the patient's District TB Register No. for follow-up of patients on TB treatment

**RESULTS (to be completed in the laboratory)**

Laboratory Serial No. \_\_\_\_\_

Date collected <sup>3</sup>	Sputum Specimen	Visual appearance <sup>4</sup>	RESULTS				
			NEG	(1–9)	(+)	(++)	(+++)
	1						
	2						
	3						

3. To be completed by the person collecting the sputum

4. Blood-stained, muco-purulent, or saliva

Examined by \_\_\_\_\_

Date \_\_\_\_\_ Signature \_\_\_\_\_



## Exercise B

### Written Exercise – Recording in the *Register of TB Suspects*

Work individually on this exercise. Ask your facilitator for help if you do not understand the instructions.

1. Fold out page 47, a blank *Register of TB Suspects*. Fill in the year (2009) and facility name (Veld Health Centre).
2. The people described below were identified as TB suspects during a two-day period at Veld Health Centre.
  - List each suspect in the *Register of TB Suspects*.
  - Assign each TB suspect, in sequence, a TB suspect number. The first will be TB suspect number 489.
  - Fill in the rest of the information about each TB suspect and when the sputum was collected and sent to the laboratory.

**Anna Abouya:** She came to the health facility complaining of cough, fever and headache on 13 November. She is female, aged 27 years. Her address is 192 Market Road, Apartment 3, Veld. When asked, she said that she and her husband had been tested for HIV and were negative, and promised to bring the written results. Her first sputum was collected on 13 November; her samples were sent to the laboratory on 15 November.

**Nyore Lori:** He came to the health facility on 13 November because he was referred by the HIV clinic for sputum examination. He is HIV-positive and says he has coughed for weeks. He is male, aged 40 years. His address is Bader House, 200 Airport Road, Veld. His first sputum sample was collected on 13 November; his samples were sent to the laboratory on 15 November.

**Kumante Waweru:** Identified during routine screening on 14 November with cough lasting more than 2 weeks. He is male, aged 31 years. His address is 21 Middle Street, Raman. His first sputum sample was collected on 14 November. He declined an HIV test. After several days, he had not returned with the second sample. His single sputum sample was sent to the laboratory on 19 November.

**Pooran Singh:** He came to the health facility on 14 November because of fever and trouble sleeping. He says that he has night sweats and has lost weight recently. He is male, aged 65 years. His address is 5 President Street, Veld. His first sputum sample was collected on 14 November. He said that he had an HIV test some years ago and it was negative. He declined another test. His sputum samples were sent to the laboratory on 16 November.

**Esna Josephus:** She came to the health facility on 14 November for an antenatal visit that included an HIV test. It was negative. Routine screening identified her as having cough for more than 2 weeks. She is female, aged 21 years. She lives at 77 Kingsway Park, Veld. Her first sputum sample was collected on 14 November. Her sputum was sent to the laboratory on 16 November.

3. On the next pages are four *Request for Sputum Smear Microscopy Examination* forms that were returned to the health centre on 22 November with the results of sputum examination for the above TB suspects. The form for TB suspect #491 (Kumante Waweru) was not returned.

For each TB suspect, record in the *Register of TB Suspects* the date the results were received (that is, 22 November). Then record the results of the sputum examination.

## REQUEST FOR SPUTUM SMEAR MICROSCOPY EXAMINATION

The completed form with results should be sent promptly by laboratory back to the referring facility

Referring facility<sup>1</sup> Veld Health Centre Date 13 Nov 2009

Name of patient Anna Abouya Age 27 Sex: ☐ M ☒ F

Complete address 192 Market Road, Apt 3  
Veld

Reason for sputum smear microscopy examination:

☒ Diagnosis

OR ☐ Follow-up Number of month of treatment: \_\_\_\_\_ District TB Register No.<sup>2</sup> \_\_\_\_\_

Name and signature of person requesting examination P. Sele P. Sele

1. Including public or private health facility/providers

2. Be sure to enter the patient's District TB Register No. for follow-up of patients on TB treatment

### RESULTS (to be completed in the laboratory)

Laboratory Serial No. 1793

Date collected <sup>3</sup>	Sputum Specimen	Visual appearance <sup>4</sup>	RESULTS				
			NEG	(1-9)	(+)	(++)	(+++)
13/11	1	m/pur	✓				
15/11	2	m/pur	✓				
	3						

3. To be completed by the person collecting the sputum

4. Blood-stained, muco-purulent, or saliva

Examined by H. Celfrement

Date 18/11/09 Signature Celfrement

## REQUEST FOR SPUTUM SMEAR MICROSCOPY EXAMINATION

The completed form with results should be sent promptly by laboratory back to the referring facility

Referring facility<sup>1</sup> Veld Health Centre Date 13 Nov 2009

Name of patient Nyore Lori Age 40 Sex: ☒ M ☐ F

Complete address Bader House, 200 Airport Rd  
Veld

Reason for sputum smear microscopy examination:

☒ Diagnosis

OR ☐ Follow-up Number of month of treatment: \_\_\_\_\_ District TB Register No.<sup>2</sup> \_\_\_\_\_

Name and signature of person requesting examination P. Sele P. Sele

1. Including public or private health facility/providers

2. Be sure to enter the patient's District TB Register No. for follow-up of patients on TB treatment

### RESULTS (to be completed in the laboratory)

Laboratory Serial No. 1794

Date collected <sup>3</sup>	Sputum Specimen	Visual appearance <sup>4</sup>	RESULTS				
			NEG	(1-9)	(+)	(++)	(+++)
<u>13/11</u>	<u>1</u>	<u>M/PUR</u>	<u>✓</u>				
<u>14/11</u>	<u>2</u>			<u>7</u>			
	<u>3</u>						

3. To be completed by the person collecting the sputum

4. Blood-stained, muco-purulent, or saliva

Examined by H. Celfrement

Date 18/11/09

Signature



## REQUEST FOR SPUTUM SMEAR MICROSCOPY EXAMINATION

The completed form with results should be sent promptly by laboratory back to the referring facility

Referring facility<sup>1</sup> Veld Health Centre Date 14 Nov 2009

Name of patient Pooran Singh Age 65 Sex: ☒ M ☐ F

Complete address 5 President Street, Veld

Reason for sputum smear microscopy examination:

☒ Diagnosis

OR ☐ Follow-up Number of month of treatment: \_\_\_\_\_ District TB Register No.<sup>2</sup> \_\_\_\_\_

Name and signature of person requesting examination P. Sele 

1. Including public or private health facility/providers

2. Be sure to enter the patient's District TB Register No. for follow-up of patients on TB treatment

### RESULTS (to be completed in the laboratory)

Laboratory Serial No. 1807

Date collected <sup>3</sup>	Sputum Specimen	Visual appearance <sup>4</sup>	RESULTS				
			NEG	(1-9)	(+)	(++)	(+++)
14/11	1	M/pur	✓				
15/11	2	M/pur	✓				
	3						

3. To be completed by the person collecting the sputum

4. Blood-stained, muco-purulent, or saliva

Examined by H. Celfrement

Date 20/11/09 Signature 

## REQUEST FOR SPUTUM SMEAR MICROSCOPY EXAMINATION

The completed form with results should be sent promptly by laboratory back to the referring facility

Referring facility<sup>1</sup> Veld Health Centre Date 14 Nov 2009

Name of patient Esna Josephus Age 21 Sex: ☐ M ☒ F

Complete address 77 Kingsway Park, Veld

Reason for sputum smear microscopy examination:

☒ Diagnosis

OR ☐ Follow-up Number of month of treatment: \_\_\_\_\_ District TB Register No.<sup>2</sup> \_\_\_\_\_

Name and signature of person requesting examination P. Sele P. Sele

1. Including public or private health facility/providers

2. Be sure to enter the patient's District TB Register No. for follow-up of patients on TB treatment

### RESULTS (to be completed in the laboratory)

Laboratory Serial No. 1808

Date collected <sup>3</sup>	Sputum Specimen	Visual appearance <sup>4</sup>	RESULTS				
			NEG	(1-9)	(+)	(++)	(+++)
14/11	1	M/pur				✓	
16/11	2	M/pur			✓		
	3						

3. To be completed by the person collecting the sputum

4. Blood-stained, muco-purulent, or saliva

Examined by H. Celfrement

Date 20/11/09

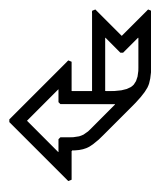
Signature 



4. Beside each TB suspect's name listed below, write the next action that you should take for the TB suspect (for example, informing the patient and opening a *TB Treatment Card*, or referring the patient to a clinician for assessment). Base your answer on the laboratory results and other information given.

- For Anna Abouya: (she is no longer coughing and feels quite well.)
- For Nyore Lori:
- For Kumante Waweru:
- For Pooran Singh: (he is still coughing and does not look well.)
- For Esna Josephus:

When you have finished this exercise, please discuss your answers with a facilitator.



Then **GO BACK** to page 26. Read section 9 and work to the end of the module (page 33).

Year \_\_\_\_\_

## REGISTER OF TB SUSPECTS

Facility \_\_\_\_\_

[illegible]

\* (Pos) Positive; (Neg) Negative; (I) Discordant/Inconclusive; (ND) Not done or unknown. Documented evidence of HIV testing during or before anti-TB treatment is reported here.

## Annexes

A. <i>Register of TB Suspects</i> .....	53
B. <i>Request for Sputum Smear Microscopy Examination</i> .....	54
C: <i>Request for Sputum Smear Microscopy, Culture, Drug Susceptibility Test</i> .....	55
D: Recommend HIV testing.....	56
E: HIV post-test counselling guidelines .....	59



Year \_\_\_\_\_

**REGISTER OF TB SUSPECTS**

Facility \_\_\_\_\_

Date (dd/mm)	TB suspect number	Name of TB suspect	Age		Complete address	Result of HIV test*	Date first sputum collected	Date sputum sent to laboratory	Date results received	Results of sputum examinations			TB Treatment Card opened (record date)	Observations/ Clinician's diagnosis
			M	F						1	2	3		

\* (Pos) Positive; (Neg) Negative; (I) Discordant/Inconclusive; (ND) Not done or unknown. Documented evidence of HIV testing during or before anti-TB treatment is reported here.

**REQUEST FOR SPUTUM SMEAR MICROSCOPY EXAMINATION**

*The completed form with results should be sent promptly by laboratory back to the referring facility*

Referring facility<sup>1</sup> \_\_\_\_\_ Date \_\_\_\_\_

Name of patient \_\_\_\_\_ Age \_\_\_\_\_ Sex: ☐ M ☐ F

Complete address \_\_\_\_\_

Reason for sputum smear microscopy examination:

☐ Diagnosis

OR ☐ Follow-up Number of month of treatment: \_\_\_\_\_ District TB Register No.<sup>2</sup> \_\_\_\_\_

Name and signature of person requesting examination \_\_\_\_\_

1. Including public or private health facility/providers

2. Be sure to enter the patient's District TB Register No. for follow-up of patients on TB treatment

**RESULTS (to be completed in the laboratory)**

Laboratory Serial No. \_\_\_\_\_

Date collected <sup>3</sup>	Sputum Specimen	Visual appearance <sup>4</sup>	RESULTS				
			NEG	(1-9)	(+)	(++)	(+++)
	1						
	2						
	3						

3. To be completed by the person collecting the sputum

4. Blood-stained, muco-purulent, or saliva

Examined by \_\_\_\_\_

Date \_\_\_\_\_ Signature \_\_\_\_\_

**Request for Sputum Smear Microscopy, Culture, Drug Susceptibility Test**

*The completed form with results should be sent promptly by the laboratory to the referring facility*

Referring facility<sup>1</sup>: \_\_\_\_\_ Date \_\_\_\_\_  
 Name of patient \_\_\_\_\_ Age \_\_\_\_\_ Sex: ☐ M ☐ F  
 Complete patient's address \_\_\_\_\_

**Test(s) requested (check any that are needed):**

☐ Smear microscopy ☐ Culture ☐ Drug susceptibility testing

Reason for sputum smear microscopy examination (check one):

☐ Diagnosis

☐ Follow-up Number of month of treatment \_\_\_\_\_ BMU TB Register number<sup>2</sup> \_\_\_\_\_

Reason for culture examination: \_\_\_\_\_

Reason for DST: \_\_\_\_\_

Name and signature of person requesting examination: \_\_\_\_\_

<sup>1</sup> Including all public and private health facilities/providers

<sup>2</sup> Be sure to enter the patient's BMU TB Register No. for follow-up of patients on chemotherapy

**SPUTUM SMEAR MICROSCOPY RESULTS (to be completed in laboratory)**

Date collected <sup>3</sup>	Sputum specimen	Laboratory serial No.	Visual appearance <sup>4</sup>	Result (check one)				
				NEG	1–9	(+)	(++)	(+++)
	1							
	2							
	3							

Date \_\_\_\_\_ Examined by (name and signature) \_\_\_\_\_

<sup>3</sup> To be completed by the person collecting the sputum

<sup>4</sup> Blood-stained, muco-purulent, saliva

**CULTURE RESULTS (to be completed in laboratory)**

Date collected	Specimen	Laboratory serial No.	Result (check one)					Contaminated
			Neg	(1–9)	(+)	(++)	(+++)	
	1							
	2							

No. growth reported	Neg
Fewer than 10 colonies	Exact number
10–100 colonies	(+)
More than 100 colonies	(+ +)
Innumerable or confluent growth	(+ + +)

Date \_\_\_\_\_ Examined by (name and signature) \_\_\_\_\_

**DST RESULTS (to be completed in laboratory)**

Date collected	Specimen	Laboratory serial No.	S	H	R	E	Z	Km	Am	Cm	Ofx	Pto/Eto	Other
	1												
	2												

R: Resistant; S: Susceptible; C: Contaminated; Nd Not done

Date \_\_\_\_\_ Examined by (name and signature) \_\_\_\_\_

## Recommend HIV testing

### 1. Provide key information on HIV infection and its treatment

**Say:** *“There is a very important issue that we need to discuss today. People with TB are also very likely to have HIV infection. In fact, HIV infection is the reason why many people develop TB in the first place. This is because people infected with HIV are not able to fight off diseases as well as people who are not infected.*

*Infection with both TB and HIV can be serious and life-threatening without proper diagnosis and treatment. Treatment for HIV is becoming more available and can help you feel better and live longer.*

*Also, if we know you have HIV infection, we can treat your TB disease better. If you decide not to be tested for HIV, you will still receive TB treatment.*

**Explain HIV/AIDS and the available treatment options:** *“HIV is a virus or a germ that destroys the part of your body needed to defend you from illness. The HIV test determines whether you have been infected with the HIV virus. It is a simple blood test that allows us to make a clearer diagnosis. After the test, we will provide counselling services to talk more in-depth about HIV/AIDS. If your test result is positive, we will provide you with information and details of available services to manage your disease. This may include antiretroviral drugs and other medicines to manage the disease. In addition, we will help you with support for prevention and to disclose the result to someone you trust. If the test is negative, we will focus on ensuring you have access to services and commodities to help you remain negative.*

*For these reasons, we recommend that all our TB patients be tested for HIV. Unless you object, you will be tested for HIV today.”*

### 2. Explain procedures to safeguard confidentiality

**Say:** *“The results of your HIV test will only be known to you and the medical team who will be treating you. This means the test results are confidential. It is against our facility’s policy to share the results with anyone else without your permission. In the event of an HIV-positive test result, you will be supported to disclose your HIV status to other people who may be unknowingly at risk of exposure to HIV infection from you.*

Ask the patient if they have any other questions.



### 3. Confirm willingness of patient to proceed with test and seek informed consent

Informed consent means that the individual has been provided with essential information about HIV/AIDS and HIV testing, has fully understood it and, based on this, has agreed to undergo an HIV test.

**Ask:** *“Are you ready to be tested? Or would you like more time to discuss the implications of a positive or negative test result for you?”*

If the patient has additional questions, provide additional information (next page). If the patient is unsure or uncomfortable with proceeding with the HIV test, refer him/her to the facility-based counsellor for a full pre-test counselling session.

If the patient is ready, then seek oral consent: *“In order to carry out this test, we need your consent.”*

**Remember:** It is the patient’s right to refuse an HIV test. The patient should still be given appropriate treatment, referral, follow-up and support.

#### In patients who consent, explain how the test is done.

**Say:** *“The test requires that we take your blood from a small prick of your finger. (Explain how the test is performed in your clinic.)*

##### **Option 1: Blood is tested by provider**

*Your blood will be tested here in the clinic. You will need to wait about 20–30 minutes while I run the test. As soon as the results are available, we will talk about the test results.*

**OR**

##### **Option 2: Blood is tested in the laboratory**

*You will need to go to the laboratory for the blood test. After the laboratory takes your blood sample, you will need to wait about 20–30 minutes while it runs the test. When the laboratory returns the results to me, we will talk about the test results.*

*We will give you the results of your HIV test today before you leave the clinic.”*

**If the patient requires additional information, discuss advantages and importance of knowing HIV status.** Things to say:

- *“The testing will allow health-care providers to make a correct diagnosis and ensure effective follow-up treatment.*
- *If you test negative, we can eliminate HIV infection from your diagnosis and provide counselling to help you remain negative.*
- *If you test positive, you will be provided with treatment and care for managing your disease, including:*
  - *co-trimoxazole preventive therapy, or CPT*
  - *regular follow-up and support*
  - *treatment for infections*
  - *antiretroviral therapy, or ART (explain the availability of ART and when it is used. See Chronic HIV Care with ART and Prevention guideline module).*
  - *(If a woman) You will be encouraged to get treatment to prevent transmission of HIV from mother to child, and make informed decisions about future pregnancies.*
- *We will also discuss the psychological and emotional implications of HIV infection. We will support you to disclose your infection to those whom you decide need to know and to other people who may unknowingly be at risk of exposure to HIV from you.*
- *An early diagnosis will help you cope better with the disease and plan better for the future.”*

## HIV Post-Test Counselling Guidelines

(adapted from *Tuberculosis Care with TB-HIV Co-management*)

### ***If patient is HIV-negative, inform and counsel***

- ▶ Explain the test result to the patient.
- ▶ Share relief or other reactions with the patient.
- ▶ Counsel the patient on the importance of staying HIV-negative by correct and consistent use of condoms, and other practices of making sex safer. Create a risk reduction plan with the patient.
- ▶ If the patient has had recent exposure to, or is at high risk of, HIV infection, explain that a negative result can mean that he or she is not infected with HIV, or that he/she is infected with HIV but has not made antibodies to the virus. A patient who has recently been infected with HIV may not yet be making antibodies to the virus. The HIV test detects the antibodies to the virus, not the virus itself. In this case, the test would not detect antibodies against HIV in the blood. This time period is often called the “window” period. Repeat HIV testing can be offered after 6–8 weeks.
- ▶ Ask the patient if there are any questions.
- ▶ Refer the patient as needed for additional prevention or care services, including peer support and special services for vulnerable populations.

### ***If patient is HIV-positive, inform and counsel***

(adapted from *Tuberculosis Care with TB-HIV Co-management*, pages 19, 22, 43, 44, 91-93)

- ▶ Explain the test result to the patient.
- ▶ Detail the consequences of HIV infection and its possible management.
- ▶ Outline the consequences for infections including TB.
- ▶ Provide immediate support after diagnosis.
- ▶ Offer emotional support.
- ▶ Allow time for the result to sink in.
- ▶ Show empathy.
- ▶ Use good listening skills.
- ▶ Find out the immediate concerns of the patient and help.
  - Ask: “*what do you understand this result to mean?*” Correct any misunderstandings about the disease.
  - Offer support.
  - What is the most important thing for you right now? Try to help address this need.
  - Tell the patient that his/her feelings or reactions are valid and normal.
  - Mobilize resources to help the patient cope.
  - Help the patient solve pressing needs.
  - Talk about the immediate future—“*what are your plans for the next few days?*”
  - Advise the patient how to deal with disclosure in the family.
  - Stress the importance of disclosure and testing of partners. Make sure the patient understands that his/her partner(s) may still be HIV-negative, even if in a long-term relationship, and that they should be protected from infection.

#### **What is HIV?**

HIV is a virus that destroys parts of the body’s immune system (body defense). A person infected with HIV may not feel sick at first, but slowly the body’s immune system is destroyed. He/she becomes ill and is unable to fight infection. Once a person is infected with HIV, he/she can give the virus to others even if he/she has no symptoms yet.

#### **Explain available treatment and care for HIV including:**

- Co-trimoxazole preventive therapy, or CPT
- Regular follow-up and support
- Treatment for infections
- antiretroviral therapy, or ART (explain availability and when it is used. See ***Chronic HIV Care with ART and Prevention.***)
- Interventions to prevent transmission of infection from mothers to their children
- Counselling to make informed decisions about future pregnancies and family planning advice
- Support and counselling
- Support for disclosure

- “Who do you think you can safely disclose the result to?”
  - “It is important to ensure that the people who know you are HIV-infected can maintain confidentiality. Who needs to know? Who does not need to know?”
- ▶ Offer to involve a peer who is HIV-positive, has come to terms with his or her infection, and who can provide help. (This is the patient’s choice.)
  - ▶ Advise how to involve partner(s).
  - ▶ Extend HIV testing and counselling to the patient’s children. Give information on the benefits of early diagnosis of HIV in infants.
  - ▶ Make sure the patient knows what psychological and practical social support services are available.
  - ▶ Explain what treatment options are available (see **IMAI Acute Care** and the **Chronic HIV Care with ARV Therapy and Prevention** guideline modules).
  - ▶ Advise on how to prevent spreading the infection.
  - ▶ Ask the patient to return depending on his/her needs. More extensive post-test counselling and support sessions can be organized at the clinic during follow-up visits or through other community resources (see **IMAI Acute Care** and the **Chronic HIV Care with ARV Therapy and Prevention** guideline modules, Annex A).

**Example script to refer a patient for care of chronic HIV infection**

*“In addition to receiving support from family and friends, you need to receive medical care that can help you feel better and live longer, even though you have HIV infection.*

*You need to go to a clinic providing long-term care and treatment for HIV infection.*

*Here is a referral form for you to give to the health-care provider in the clinic explaining that you are receiving treatment in the TB clinic, and that you have been tested for HIV.*

*Also, if you/your partner are pregnant or planning to get pregnant, you should tell your health-care provider at the HIV clinic so that he/she can talk to you about protecting your unborn child from HIV infection.*

*If you do not wish others to know your HIV status at this time, you should take care to keep your letter in a private place until you give it to the health-care provider in the HIV clinic.*

*It is important that you go to this clinic as soon as possible. I hope you will be able to go before our next visit. We can talk about this at your next visit.”*

**Counsel on how HIV is transmitted and not transmitted**

HIV can be transmitted through:

- Exchange of HIV-infected body fluids such as semen, vaginal fluid or blood during unprotected sexual intercourse
- HIV-infected blood transfusions
- Injecting drug use
- Sharing of instruments for tattoo, scarification or circumcision
- From an infected mother to her child during:
  - Pregnancy
  - Labour and delivery
  - Postpartum through breastfeeding

HIV cannot be transmitted by hugging or kissing, or from mosquito bites.

## **How to prevent sexual transmission of HIV**

(Use the *IMAI Flipchart for Patient Education* to support providing this information and for more detail.)

- Warn about the risks of unprotected sex.
- Educate on the risk of HIV infection to sexual partners.
- Help patient to assess the current risk of transmission and make an individual risk reduction plan.
- Explain that it is possible to become reinfected with another strain of HIV or to get a sexually-transmitted infection (STI).
- Explain that sexual activity need not be avoided, but precautions are necessary.
- Counsel on consistent and correct use of condoms during every sexual encounter.
- Educate that it is essential to consistently use condoms even if already infected with HIV or if both partners are HIV-positive.
- Use condoms for vaginal, anal and oral intercourse.
- Demonstrate how to use both male and female condoms.
  - Use model to demonstrate correct use.
  - Educate to put condom on before penetrative sex, not just before ejaculation.
  - Request client to demonstrate correct use of condoms.
- Educate on advantages/disadvantages of both male and female condoms.
- Advise to use water-based lubricants.

## **Discuss potential barriers to consistent and correct use of condoms**

- Explore options to overcome barriers.
- Provide techniques/skills for negotiating condom use according to the needs expressed by clients.
- Role-play condom negotiation with client.

## **Provide condoms and discuss how client will assure a regular supply of condoms**

### **Counsel on safer sex and reducing risk of transmission**

- Counsel on partner reduction while emphasizing consistent condom usage during all sexual encounters.
- Counsel on less risky sex—choose sexual activities that do not allow semen, fluid from the vagina, or blood to enter the mouth, anus or vagina of the partner.
- Educate on symptoms of STIs with clients and counsel them to receive prompt treatment if they suspect a STI.
- Dispel any prevailing myths on cleansing of HIV infection through sexual intercourse with minors or others. Discuss any other local myths that may impact on positive prevention, for example, belief that condoms transmit HIV.
- For adult men, emphasize not having sex with teenagers or girls (or boys).
- Emphasize that even if a client is on ART, HIV transmission can still occur.
- Respond to concerns about sexual function. Encourage questions from clients. Emphasize that normal sexual activity can continue, with above stated precautions.

**Support disclosure of HIV-positive status**

- Discuss advantages of disclosure.
- Ask the patient if they have disclosed their result or are willing to disclose the result to anyone.
- Discuss concerns about disclosure to partner, children and other family members, friends.
- Assess readiness to disclose HIV status and to whom. Assess social network (start with least risky).
- Assess social support and needs. See Annex A.4 in *IMAI Chronic HIV Care with ARV Therapy and Prevention*.
- Provide skills for disclosure (role play and rehearsal can help).
- Help the patient make a plan for disclosure.
- Encourage attendance of the partner to consider testing; explore barriers to this.
- Reassure that you will keep the result confidential.
- If domestic violence is a risk, create a plan for a safe environment.
- If the patient does not want to disclose the result, reassure that the results will remain confidential.
- Explore the difficulties and barriers to disclosure. Address fears and lack of skills (help provide skills).
- Continue to motivate. Address the possibility of harm to others.
- Offer another appointment and more help as needed (such as peer counsellors).

**Especially for women, discuss benefits and possible disadvantages of disclosure of a positive result, and involving and testing partners**

- Men are generally the decision makers in the family and communities. Involving them will:
  - Have greater impact on increasing acceptance of condom use and practicing safer sex to avoid infection.
  - Help avoid unwanted pregnancy.
  - Help to decrease the risk of suspicion and violence.
  - Help to increase support to their partners.
  - Motivate them to get tested.
- Disadvantages of involving and testing the partner: danger of blame, violence and abandonment.

Health workers should try to counsel couples together, when possible.









